

REMARKS

Claims 1-14 are pending in the application. Claims 5-8 and 11-14 are allowed. Claims 1-4, 9, and 10 are rejected under 35 U.S.C. § 102(b) as being anticipated by Mizuuchi et al. (U.S. Patent No. 5,652,674) (“Mizuuchi”). Applicant has amended claim 1 by adding the subject matter of claim 2, amended claim 3 by adding the subject matter of claim 9, canceled claims 2 and 9, and add new claims 15-20 to more particularly claim the invention and to submit the following arguments to traverse the prior art rejections.

Applicants’ invention relates to a wavelength converting element and a method of manufacture thereof. In an embodiment, a wavelength converting element in which the peak of a vertical transverse mode with respect to a substrate of a second harmonic is made to coincide with a fundamental wave such that an improvement in the beam shape are achieved.

Mizuuchi relates to a method for manufacturing a domain-inverted region which makes use of an application of an electric field. Further, Mizuuchi discloses a wavelength conversion device manufactured by such a method which utilized a coherent light source and has the domain-inverted region.

For claim 1, Applicants submit that Mizuuchi fails to teach or suggest each and every element of the claim. For example, Mizuuchi fails to teach a waveguide formed by proton implantation. In the section of Mizuuchi cited by the Examiner, the implantation of proton ions is disclosed as a method of deteriorating the ferroelectricity of the surface of the substrate, in “EXAMPLE 3” (col. 24, lines 20-24). Nowhere in Mizuuchi, however, is there any mention of a waveguide formed by proton implantation and further, EXAMPLE 3 has no discussion regarding

any waveguides. Thus, claim 1 is patentable because Mizuuchi fails to teach or suggest the waveguide as recited in the claim.

Claim 3 is amended to include the subject matter of claim 9 which is cancelled. For reasons similar to those submitted for claim 1, claim 3 is patentable because Mizuuchi fails to teach or suggest a step wherein in the ion implantation, protons are implanted.

As for claim 4, although the reference discloses the possibility of forming an optical waveguide first, and then a domain-inverted region (col. 39, lines 22-27), as the Examiner states, Applicants submit that such an order is disclosed in the context of an optical waveguide formed by diffusion. To the contrary, claim 4 recites a step of forming inverted domains after a waveguide has been formed at an interior of an optical crystal substrate by carrying out ion implantation. Nowhere in Mizuuchi is there any teaching or suggestion for such order of formation in the context of ion implantation.

Claim 10, which depends from claim 4, is patentable for at least the reasons submitted for claim 4.

Claims 2 and 9 are cancelled without prejudice or disclaimer.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.


Respectfully submitted,

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